Initiative: Remove Requirement to Consider LOOP in Conjunction with Large LOCA – BWR Owners' Group Topical Report

Lead Office/Division: NRR/DE
Supporting Offices/Divisions: NRR/DSS, NRR/DRA, NRR/DPR

Description

The Boiling Water Reactor Owners' Group (BWROG) submitted License Topical Report (LTR) NEDO-33148, Revision 2, "Separation of Loss of Offsite Power from Large Break LOCA." The LTR provides the technical and regulatory basis for an exemption request from the current regulations, which require (in part) the ability for a plant to mitigate large break loss of coolant (LOCA) accidents using only onsite power system operation (assuming offsite power is not available). Granting this exemption would allow a licensee to assume that the offsite power system remains available to mitigate a large break LOCA (LBLOCA).

The subject of the proposed exemption request is part of "Option 3" as set forth in Commission Paper SECY-98-300, "Options for Risk-Informed Revisions to 10 CFR Part 50 – 'Domestic Licensing of Production and Utilization Facilities'," dated December 23, 1998.

The stated goal of the LTR is to provide a method for developing an exemption request that will result in a more risk-balanced plant design and improve overall plant safety by the elimination of an unnecessary and burdensome regulatory requirement. The LTR seeks to redefine, through the exemption process, the LBLOCA/LOOP combination from a design basis event to a beyond design basis accident, for which some mitigation capability must be assured. Also, continued compliance with 10 CFR 50.46 (and all other relevant regulations) must be demonstrated after any plant changes to the revised design basis (LBLOCA with offsite power available, and Small Break LOCAs, both with and without LOOP).

The existing regulations requiring that all possible breaks be mitigated using onsite power sources drive many of the design and operating requirements and parameters. Some of these requirements and parameters exist for the sole purpose of mitigating the largest, least likely breaks in the absence of offsite electrical power. Implementation of these requirements and parameters can make the performance of mitigating systems less than optimal for many of the more likely events. If the performance of the mitigating systems can be optimized over the entire range of challenges, then overall plant risk may be reduced.

Completed Milestones (date complete)

- NEDO-33148 Rev. 1 (ML041210900) submitted (04/27/04)
- RAIs transmitted to BWROG addressing proposed generic risk assessment (ML053330380) (12/02/05)
- Meeting with BWROG to discuss RAIs. BWROG agreed to submit new Topical emphasizing risk methodology, not generic risk assessment. (02/14/06)
- Meeting with BWROG to discuss content of proposed Revision 2 of the Topical (06/14/06)
- BWROG provided Revision 2 to NEDO-33148 (ML062480321) (08/25/06)
- RAIs on the revised LTR transmitted to the BWROG (ML071630548) (06/15/07)
- Meeting with BWROG to clarify RAIs (07/25/07)

Future Milestones

Selected Major Milestones and Schedules				
Major Milestones	**Original Target Date**	**Revised Date**	**Completion Date**	**NRC Responsibility**
BWROG responds to RAIs	05/25/07	10/19/07		NA
Draft SE with open issues to PM	08/10/07	01/25/08		NRR/DE NRR/DSS NRR/DRA NRR/DPR
Final SE	10/26/07	03/28/08		NRR/DE NRR/DSS NRR/DRA NRR/DPR